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(54) **METHOD FOR PRODUCING A C₃+
HYDROCARBON-RICH FRACTION AND A
METHANE- AND ETHANE-RICH STREAM
FROM A HYDROCARBON-RICH FEED
STREAM, AND RELATED FACILITY**

(58) **Field of Classification Search**
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F25J 3/0242; F25J 3/0247; F25J 2240/02;
(Continued)

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(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 780 days.

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CPC **F25J 1/0022** (2013.01); **C07C 7/005**
(2013.01); **C07C 7/04** (2013.01); **C07C 7/09**
(2013.01);
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(57) **ABSTRACT**

The method according to the invention comprises the separation of a feed stream (16) into a first fraction (60) and a second fraction (62) and the injection of at least part of the second fraction (62) into a second dynamic expansion turbine (46) to form a second expanded fraction (80).

It comprises the cooling of the second expanded fraction (80) through heat exchange with at least part of the first headstream (84) coming from a first column (28) and the formation of a second feed stream (82) of the first column (28) from the second cooled expanded fraction.

20 Claims, 7 Drawing Sheets

